

DETAILED ACTION

1. The Office Action of July 17, 2009 is hereby **VACATED** due to obvious but unintended ambiguity in the original Final Office Action, and is replaced by the following Final Office Action. Claims 1 through 11 are pending. Claim 1 has been amended. Applicants' claim to foreign priority of application JAPAN 2003-333159 filed September 25, 2003 is acknowledged. Applicants' amendments and arguments filed March 13, 2009 have been entered and carefully considered.

Prior Rejections

2. With regard to the prior rejection of claims 1 and 4 under 35 U.S.C. 102(b), Applicants have amended claim 1 to include the lyophilic nature of the object material. The claims, as such, although obvious (see below), are not anticipated by Bonkhoff et al. Therefore, the rejection of claims 1 and 4 as anticipated by Bonkhoff et al. is hereby withdrawn.

3. With regard to the prior rejection of claims 1, 2 and 4 through 9 under 35 U.S.C. 103(a), Applicants' argue that the claims are not obvious over the prior art. This argument has not been found to be persuasive for reasons of record. art. Therefore, the rejection of claims 1, 2, and 4 through 9 as obvious over Bonkhoff et al. and further in view of Nekrasov et al. and the USEPA CLP SOW is maintained for reasons of record as discussed below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4 and 5 of are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonkhoff et al. (US 6,063,281, May 19, 2000) and with respect to the ultrasonic limitation of claim 4 further in view of Nekrasov et al. (Chemistry and Technology of Fuels and Oils, 1980, 16(2), 99-103) and with respect to claims 5 through 9 further in view of the USEPA Contract Laboratory Program Statement of work for Organics Analysis (May 1999, Section 10.1.3.1.3)(CLP SOW).

6. Claim 1 is drawn to method for collecting an object material from a solution, which comprises a step of adding a second solvent to a solution composed of an object material to be collected and a first solvent, then mixing therewith to form an emulsion containing the object material in the second solvent in a state of which the emulsion is not uniformly dissolved in the second solvent, and a step of separating the thus obtained emulsion from the solution, wherein the object material has at least two parts having different lyophilic properties individually. Claim 2 further limits claim 1, wherein the first solvent is an organic solvent and the second solvent is water. Claim 4 further limits claim 1 to creating the emulsion using an ultrasonic or mechanical device. Claim 5 further limits claim 1 to include a step of collecting the object material from the emulsion. Claim 6 further limits the collection method of claim 5 to centrifugal separation. Claims 7 further limits the collection method of claim 5 to an extraction separation with a solvent and claim 8 limits the solvent of claim 7 to one of lower boiling

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point than both the object material or the second solvent. Claim 9 further limits the object material extracted in claim 8 to isolation by distillation.

7. Bonkhoff et al. clearly renders obvious the broad scope of claim 1 by teaching the extraction of organic compounds (object material) contained in an aqueous solution (a first solvent) by intensely mixing the aqueous solution with a water immiscible liquid (a second solvent) generating an emulsion which is subsequently separated by centrifugation (see ABSTRACT and column 2, lines 16-65). Since instant claim 1 makes no distinction between the compositions of the first and second solvents, nor the nature of the object material, instant claim 1 clearly is rendered obvious by Bonkhoff et al.. Claim 4 is clearly suggested by Bonkhoff et al. by teaching the use of a centrifugal extractor (a mechanical agitator) for intensive mixing to generate the emulsion. The broad recitation of claim 5 of "collecting the object material from the emulsion obtained in the separating step after the separating step" is of course a basic procedure in the chemical industry.

8. Nekrasov et al. teach the production of emulsions claimed in claim 4 using ultrasonic devices (see page 100, para 3, lines 10 and 11; page 102, para 3, lines 1 through 3) and the use of mechanical agitators in extraction chemistry is a well known procedure.

9. Clearly, Bonkhoff et al. combined with the teachings of Nekrasov et al. renders obvious all the functional elements of instant claim 4. It would be obvious to one of ordinary skill to combine the ultrasonic formation of emulsions taught by Nekrasov et al. with the method of object material collection taught by Bonkhoff et al.

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10. The CLP SOW teaches the use of centrifugation claimed in claim 6 to complete the phase separation in an emulsion (page D-34, Section 10.1.3.1.3, lines 13 through 16). Furthermore, the CLP SOW Section 10 is written for the extraction and analysis of pesticides, many of which have lyophilic properties (i.e. dinoseb, endosulfan, 2,4-D, etc.) and are subject to emulsions during extraction with hexane and/or methylene chloride (each of lower BP than water).

11. Clearly, Bonkhoff et al. combined with the teachings of CLP SOW renders obvious all the functional elements of the instant claims 5 through 9. It would be obvious to one of ordinary skill to combine the centrifugal emulsion separation taught by the CLP SOW with the method of object material collection taught by Bonkhoff et al.

12. Further, it is obvious to one of skill in the art to apply solvent reversal to the order of solvent addition as claimed in claim 2, as well as applying a collection step for the object material from the emulsion. The use of extraction and distillation to accomplish the isolation of the object material are rudimentary practices in the art, and the selection of appropriate solvents to do so is obvious to the practitioners of rudimentary skill in the art.

Claim Objections

13. Claims 3, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Gallis whose telephone number is 571-272-9068. The examiner can normally be reached on Mon-Thur 8:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-1600. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David E. Gallis
Patent Examiner

/ Bernard Dentz/

Primary Examiner, Art Unit 1625